



MATERIAL SAFETY DATA SHEET

24 Hour Emergency Phone (316) 524-5751

✂ Division of Vulcan Materials Company / P.O. Box 7689 • Birmingham, AL 35253-0689

I - IDENTIFICATION

| | | |
|--|---|--|
| CHEMICAL NAME 1,1,1 Trichloroethane | CHEMICAL FORMULA C₂H₃Cl₃ | MOLECULAR WEIGHT 133.4 |
| TRADE NAME Solvent 111®, General Purpose Grade, Industrial Grade | | |
| SYNONYMS Methyl Chloroform | | DOT IDENTIFICATION NO. UN 2831 |

II - PRODUCT AND COMPONENT DATA

| COMPONENT(S) CHEMICAL NAME | CAS REGISTRY NO. | % (Approx) | ACGIH TLV-TWA |
|--|-----------------------------------|-------------|----------------|
| 1,1,1 Trichloroethane Diethylene ether The hazard information presented is based on test conducted on this or similar mixtures. | 71-55-6 123-91-1 | 95.5 | 350 ppm |

III - PHYSICAL DATA

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| APPEARANCE AND ODOR Clear, colorless liquid, mildly sweet odor | SPECIFIC GRAVITY 1.32 @ 25°/25°C |
| BOILING POINT 165°F (74°C) | VAPOR DENSITY IN AIR (Air = 1) 4.6 |
| VAPOR PRESSURE 100 mm Hg @ 20°C | % VOLATILE, BY VOLUME 100 |
| EVAPORATION RATE (ether = 1): 0.4 | SOLUBILITY IN WATER 0.07 gm/100 gm @ 25°C |

IV - REACTIVITY DATA

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|--|--|
| STABILITY Stable | CONDITIONS TO AVOID Avoid contact with open flame, electric arcs, or other hot surfaces which can cause thermal decomposition. |
| INCOMPATIBILITY (Materials to avoid) Strong alkalis, oxidizers, and reactive metals. | |
| HAZARDOUS DECOMPOSITION PRODUCTS Hydrogen chloride, phosgene, chlorine. | |
| HAZARDOUS POLYMERIZATION Will not occur. | |

V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)

None (TCC)

FLAMMABLE LIMITS IN AIR

7.5 - 15.0% (vol.) @ 25°C

EXTINGUISHING AGENTS

Water, foam, dry chemical, carbon dioxide (CO₂)

UNUSUAL FIRE AND EXPLOSION HAZARDS Concentrated vapors can be ignited by high intensity ignition source. Firefighters should wear self-contained, positive-pressure breathing apparatus, due to thermal decomposition products, and avoid skin contact.

VI - TOXICITY AND FIRST AID

EXPOSURE LIMITS (When exposure to this product and other chemicals is concurrent, the TLV must be defined in the workplace.)

1,1,1 trichloroethane ACGIH: 350 ppm TWA (8 hr), 450 ppm STEL

OSHA: 350 ppm TWA (8 hr)

(Odor threshold approximately 100 ppm; causes olfactory fatigue)

Effects described in this section are believed not to occur if exposures are maintained at or below appropriate TLVs.

Because of the wide variation in individual susceptibility, TLVs may not be applicable to all persons and those with medical conditions listed below.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Acute and chronic liver disease and rhythm disorders of the heart.
heart.

ACUTE TOXICITY

Primary route(s) of exposure:

☒ Inhalation

☐ Skin Absorption

☐ Ingestion

Inhalation: Major potential route of exposure. Minimal effects observed below 1,000 ppm; dizziness, drowsiness, and throat irritation at levels above 1,000 ppm. Unconsciousness and death possible at levels above 10,000 ppm. Blood pressure depression, cardiac sensitization, and ventricular arrhythmia can result from the exposure to near-anesthetic levels.

Skin: Prolonged or repeated skin contact can cause irritation, defatting of skin, and dermatitis. Absorption of liquid through intact skin possible, resulting in systemic effects, but unlikely route of significant exposure.

Eyes: Liquid can cause slight temporary irritation with slight temporary corneal injury. Vapors can irritate eyes.

Ingestion: Single dose toxicity is low to moderate. If vomiting occurs, 1,1,1 trichloroethane can be aspirated into the lungs, which can cause chemical pneumonia and systemic effects.

FIRST AID

Inhalation: Remove to fresh air. If breathing has stopped, administer artificial respiration. Call a physician.

Skin: Remove contaminated clothing and shoes. Wash exposed area with soap and water. Wash contaminated clothing before reuse.

Eyes: Flush eyes immediately with water for at least 15 minutes. If irritation persists, call a physician.

Ingestion: Do not induce vomiting. Contact physician or emergency medical facility immediately.

NOTE TO PHYSICIAN: Adrenalin should never be given to persons overexposed to 1,1,1 trichloroethane.

CHRONIC TOXICITY

Chronic overexposures to 1,1,1 trichloroethane have caused liver toxic effects in experimental animals.

Carcinogenicity - The available data indicates that 1,1,1 trichloroethane is not carcinogenic in laboratory animals.

1,1,1 trichloroethane is not listed on the OSHA, IARC, or NTP carcinogen lists.

Reproductive Toxicity - Three studies have been performed on laboratory animals to evaluate the effects of 1,1,1 trichloroethane on reproduction and fetal development. Two of the three studies indicate no reproductive toxicity. The third study noted delays in normal development, but these delays did not affect later life.

VII - PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION

Where vapor concentration exceeds or is likely to exceed 350 ppm, an approved organic vapor type respirator is acceptable. Approved self-contained breathing apparatus or air line respirator, with full face piece, is required for vapor concentrations above 1,000 ppm and for spills and/or emergencies. Follow any applicable respirator use standards or regulations.

VENTILATION

Do not use in closed or confined space. Open doors and/or windows. Use ventilation to maintain exposure levels below 350 ppm.

SKIN PROTECTION

Wear solvent-resistant gloves such as Viton, polyvinyl alcohol, or equivalent. Solvent-resistant boots, apron, headgear and/or faceshield should be worn where splashing is possible.

EYE PROTECTION

Wear safety glasses. Contact lenses should not be worn. Chemical goggles and/or face shields should be worn where splashing is possible.

HYGIENE

Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using restroom.

OTHER CONTROL MEASURES

To determine exposure level(s), monitoring should be performed regularly. Safety shower and eyewash station should be available.

NOTE: Protective equipment and clothing should be selected, used, and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer or the Vulcan Chemicals Technical Service department.

VIII – STORAGE AND HANDLING PRECAUTIONS

Follow protective controls set forth in Section VII when handling this product.

Store labeled and sealed containers in a cool, dry, well-ventilated area. Prevent water or moist air from entering storage tanks or containers. Do not cut or weld on empty or full drums. Aluminum equipment should not be used for storage and/or transfer.

Vapors are heavier than air and will collect in low areas.

Contact with aluminum parts in a pressurizable fluid system may cause violent reactions. Consult equipment supplier for further information.

Do not remove or deface label. Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws.

IX – SPILL LEAK AND DISPOSAL PRACTICES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Evacuate the area, ventilate, and avoid breathing vapors. Dike area to contain spill. Clean up area (wear protective equipment – refer to Section VII) by mopping or with absorbent material and place in closed containers for disposal. Avoid contamination of ground and surface waters. Do not flush to sewer.

If spill occurs indoors, turn off air conditioning and/or heating system, to prevent vapors from contaminating entire building.

WASTE DISPOSAL METHOD

Recovered liquids may be sent to a licensed reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility. Consult federal, state, or local disposal authorities for approved procedures.

X – TRANSPORTATION

DOT HAZARD CLASSIFICATION

None when transported by land or water. ORM-A when transported by air.

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by OSHA Hazard Communication Standard, and any applicable state and local regulations. ORM-A when transported by air.

Medical Emergencies

Call collect 24 hours a day
for emergency toxicological
information 415/821-5338

Other Emergency information

Call 316/524-5751 (24 hours)

For any other information contact:

Vulcan Chemicals
Technical Service Department
P. O. Box 7689
Birmingham, AL 35253-0689
205/877-3459
8 AM to 5 PM Central Time
Monday through Friday

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NOTICE: Vulcan Chemicals believes that the information contained on this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules or insurance requirements.

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